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ABSTRACT

Despite accompanying drawbacks, the Internet information system known as Gopher presents a rich variety of potential benefits to writing pedagogies and to educational administrators. Writing teachers need to overcome tendencies to think of exploration of the Internet information resources as something to be uncritically adopted and as something to be added to existing pedagogies without corresponding modifications in thinking and practice. Elements of a writing class likely to be affected by gopher exploration include: (1) greater student interactivity with the information they read; (2) greater student inventiveness; (3) meta-discourse and meta-learning; (4) greater "virtuality" of the classroom; (5) students' awareness of themselves as both audience and as rhetor; (6) evaluation of students' writing; (7) student observation and participation in the continuous revision of gopher sites; (8) the role of the teacher; and (9) students thinking of pre-existing texts as information sources rather than as discourses to be emulated. General ideas for gopher-based writing pedagogy include asking students to learn about a place or topic using gopher; having students describe a gopher site; and having students construct guides to gopher sites. Using a sequence of three lesson plans, students can be introduced to a gopher-based writing pedagogy. Bowling Green State University's General Studies Writing program, like an increasing number of academic departments and programs, is using a gopher server as an aid to its operations. Fear of the unknown appears to be the largest single constraint for both students and instructors in acquiring skills and knowledge via gopher explorations. Gopher-based assignments are best evaluated as a part of a process rather than as an end in themselves, and the evaluation of such assignments should be flexible enough to allow for indeterminable outcomes. (RS)

ED 376 501

Applications of Gopher Information Systems for Composition Classes and Programs

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(A Paper Presented at the Annual Conference of the National Council of Teachers of English, November 19, 1994, in Orlando, Florida.)

Abstract

Despite accompanying drawbacks, the Internet information system known as Gopher presents a rich variety of potential benefits to writing pedagogies and to educational administrators. It is necessary, however, for writing teachers to overcome tendencies to think of exploration of Internet information resources as something to be uncritically adopted and, even more significantly, as something to be added to existing pedagogies without corresponding modifications in thinking and practice. This paper provides rationales for the adoption of Gopher database exploration in writing classes and programs, potential effects of such adoption on writing pedagogies, lesson suggestions, a description of a Gopher file set up for writing-program use, and inferences about Gopher use based on the experiences of the author.

As computers become an increasing influence in composition classes, those who teach and administer these classes must correspondingly increase their awareness of the benefits and drawbacks potential to computer-based information technologies. One of the aspects of these technologies which holds great promise for adding to the depth and richness of compositional learning is exemplified in Internet information resources such as Gopher. This paper discusses pedagogical and administrative considerations of Internet applications for the teaching of writing, with special focus on student explorations of the Gopher system. Sections of the paper include rationales for using Gopher data-searches in a composition class, elements of the class likely to be affected by curricular attention to Gopher resources, both general and specific lesson suggestions, description of some administrative applications of Gopher, and experience-based inferences about Gopher's potential for the teaching of writing.

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Rationales

Any communication technology (yes, even "mere" reading of a computer-based reference file is a form of communication) has the potential to create good and bad effects but does not of itself change the potentials of human discourse agents for creating good or bad. Thus, in suggesting some potentials of Gopher for academic writing, I consider it a given that both benefits and drawbacks inhere in every practice discussed. Because I perceive more good than bad in the careful educational application of Internet resources, however, I also unabashedly expend more of this paper's finite rhetorical resources on describing potential benefits.

Why use Gopher or any other Internet communication resource in a writing class? This question, which is answered more specifically in ensuing descriptions of the effects of Gopher-searching on various elements of composition classes, is one which I always expect colleagues and other educators to ask. Strangely enough, they usually don't ask it, but have a more do-or-don't attitude about the incorporation of any computer-based information technology into writing classes. Simply put, that is, those with whom I discuss curricular attention to Gopher or any other electronic information/communication resources tend to imply that any teacher with appropriate knowledge should employ those resources in his/her pedagogy and any teacher without such a store of knowledge shouldn't.

Comments between writing instructors about the use of Gophers (or e-mail, or electronic discussion groups, etc.), that is, tend to run something like the following: "I want to learn how to use Gopher some day, so I can have my students use it in class, but right now I just don't have the time." The implications of such remarks, it seems to me, include an assumption that one "does" all the information technology one can in a writing class because knowledge about information technologies is good for students. I am troubled, though, by at least two apparent

beliefs concomitant to such an assumption: One of these (largely unexamined) beliefs is that computer-based information technologies are primarily beneficial to students, and the second is that unless the instructor already knows enough about a specific technology to impart a "full" understanding to students, then the class can get along without that knowledge and the instructor has no strong responsibility for introducing that technology to the class.

Both of the just-mentioned beliefs seem illogical, because students can just as easily be harmed as helped by class-based experiences with a technology like Gopher and because a teacher's responsibility isn't always to impart knowledge to students, but rather to provide students with opportunities for gaining desired knowledge.

Fortunately, notwithstanding my playing devil's advocate with myself, many logical reasons exist for providing students with opportunities to learn through Gopher explorations. For instance, despite the danger inherent in assuming that any study pertaining to computers is automatically helpful to students, gaining increased computer-oriented knowledge is relatively likely to benefit them, and especially likely to benefit them where relatively cutting-edge technologies like Internet navigation are concerned. Moreover, exploring Gopher "space" tends to increase students' awareness of their places within knowledge and discourse systems at a time when many of them are forming crucial understandings of their selves in relation to their worlds. Finally, precisely because Gopher is an information/communication system (relatively) less hegemonically administered than corresponding systems like university libraries or textbooks, students can gain an increased sense of ideational and rhetorical power within such a system, a potentially powerful incentive for students to become more involved in their engagements with such a knowledge system. These broad rationales are provided with intent to lead into more specific considerations in the next section.

Elements of a Writing Class Likely to Be Affected by Gopher-Exploration

The list of class elements unlikely to be affected by explicit pedagogical explorations of Gopher space would be a much shorter one, if in fact any elements exist which could not at least potentially be affected. Although each is obviously complex enough to deserve individual consideration in separate articles or papers, the elements or aspects of a writing class named in this section receive just enough discussion, I hope, to facilitate educators' thinking and future discussions about Gopher's place in writing pedagogies. Furthermore, because I believe hierarchical stratification of the elements within these considerations would do more to undercut the positive implementation of Gopher-explorations than it would to aid that implementation, the order of discussion is deliberately randomized.

Interactivity

Ironically enough, what seems an essentially passive, read-only database can actually foster greater student interactivity with the information they read than students typically exhibit in their engagements with other information sources, especially if their instructors appropriately encourage them to interact with Gopher resources. Students could, of course, simply "cruise the Internet" and essentially copy the first relevant information they encounter, but at least three factors strongly militate against such an eventuality. First, Gopher systems are not highly organized, and their organization tends to be idiosyncratic. Thus, students must either learn personal skills for navigation within this flexibly organized system or be severely limited in their data-acquiring capacities. A second reason for increased student interactivity with Gopher-based information is that this information encompasses such a wide range of interests that, barring instructors' inhibiting restrictions, students should always be able to find information pertaining to a topic of personal concern. And finally but not exhaustively, the information found in

Gopher files tends to be more simply "raw data" than fully developed or even more precisely developed academic modes of writing. Hence, students wishing to somehow use this information within their own discourses must bend this information to their own uses, manipulating the ideas rather than simply "acquiring" the voice (or the entire discourse) of another.

Inventiveness

One of the greatest benefits of Gopher exploration and one of the potentially greatest drawbacks inhere in the same issue of inventiveness. That is, students who have little to say in traditional writing pedagogies, who find little interest in so-called conventional topics or writing exigencies, have the opportunity to synthesize information in truly original fashion when that information is Gopher-based. Within the traditional paradigm of educational research-based writing, multiple students within a given class typically produce the same type of essay using essentially the same sources, which occurs because (among other reasons) students who explore the same database (the school library) via the same search mechanism will tend to encounter much of the same information in much the same order.

Within this traditional paradigm, students are engaged in the (predestined to be losing) battle of trying to "out-academicize" the mostly academic writing they find in their school library's sources and can't much be blamed for failing to see the point in such an exercise. Although many Gopher servers are academically based, however, many are not, and even those attributable to academics tend to be constructed by the least hierachically established academicians. In point of fact, the information available in Gopher systems is so loosely organized, so eclectic, and so informally presented in comparison to typically academic writing that every Gopher-based essay a student constructs is likely to be a truly unique piece of discourse.

Of course, what many academics perceive as the potential danger in students basing their writing on Gopher-based information is plagiarism, a (supposedly) greater temptation because teachers have greater difficulty locating a student's sources within the vast array of Internet information. The issue of plagiarism is a huge and unsettled one, far beyond the capacity of this text to address, but I'll provide two relative answers to this danger. For one, students who want badly enough to plagiarize tend to find ways to accomplish this crime, regardless of teachers' endeavors. The sure way to stop students from plagiarizing, in fact, has already been invented and used with great determination—requiring every student to write on the same topic and to use the same sources. Scarcely less transactional nor less motivated writing can be imagined than the writing engendered by such a requirement, and even partially plagiarized but more original and more meaningful Gopher-based writing, as long as plagiarism isn't valorized or accepted without demure, may lead to more productive writing practices. Secondly, the danger of plagiarism from electronic sources is reduced, at any rate, by the already-mentioned dissimilarity between Gopher-file prose and that of the academic discourse types students are expected to produce.

Meta-Discourse and Meta-Learning

If college and college writing are "about" learning, than discourse about learning should be an important emphasis in writing classes. Gopher exploration as a pedagogical activity facilitates such discourse in a number of ways, two of which particularly stand out. A great deal of information to be found in Gopher databases, for example, is indirectly or directly related to academic learning. As such, this information provides a wealth of topical material for class discussions and for class writing, material of immediate concern to students and in many cases directly parallel to the experiences the students are engaged in at the time of their own writing.

In addition, because of the rapidly changing informational environments within Gopher databases, the (again) relatively idiosyncratic organization of those databases, and the immense number of such databases, students who spend any significant amount of time in Gopher explorations are likely to rapidly acquire a great deal of personalized learning. Furthermore, because individual learning thus acquired tends to exhibit interesting similarities and dissimilarities between and among class members, discussions which encourage their discovery and articulation are likely to further the learning of all class members.

The Virtual Classroom

One of the most-cited effects of increasing emphasis on computer-based information technologies in writing classes is an increasing virtuality of the class's intellectual space. E-mail and other more conventionally conceptualized communication systems would appear to increase the classroom's virtual space in ways that Gopher databases do not. Nevertheless, students who have ready access to Gopher or similar Internet databases (access, of course, varying widely across situations) can easily carry their immersion in ideas far beyond the physical boundaries of the traditionally defined classroom, can find a blending of informational sources far less academically parochialized than the libraries of academic institutions, and can even, with the blessings of teachers and school administrators, contribute to the authoring of Gopher files. With appropriate teacher support, the almost-ineluctable increase in individual agency which inheres in explorations and uses of Gopher-based information tends to expand the "size" of the classroom by expanding the contribution of each class member.

Audience Awareness

Students' awareness of themselves as both audience and rhetor can easily be increased in the writing class which includes Gopher exploration in its learning activities. In addition, those understandings can be fruitfully diversified. Students,

that is, often find it easier to think of themselves as a real part of the writer's audience when that writer is describing a college campus for the benefit of those who are considering enrolling there, or when the writer provides information relevant to those with a particular topical interest (including, perhaps, those particular students). When students also have the opportunity to add to Gopher-system discourses by writing Gopher files, or even the opportunity to emulate the discourses common to academic matters so frequently found in education-related Gopher servers, they then tend to display increased awareness of their audiences. A blending of e-mail correspondence between students at different campuses with comparative analyses of the information in Gopher files at those campuses tends to especially enhance the audience awareness of student writers.

Evaluation

All stakeholders in institutionalized classes have great difficulty in escaping the traditional paradigm of academic evaluation, if indeed they want to escape it, despite its obvious and much-reported shortcomings. For better or for worse, however, or perhaps for better and for worse, traditional evaluation of Gopher-exploration assignments is a troublesome task. That is, because the outcome of every Gopher exploration is highly uncertain unless very tightly controlled (a degree of control which would necessarily obviate much of the specific benefit of such an activity), normative evaluation is essentially out of the question. Like most computer-based assignments, the institutional guidelines for performance in Gopher-searching remain largely undetermined. Therefore, teachers who incorporate such an activity into their pedagogies have both the opportunity to redesign evaluative criteria and the responsibility for doing so. The lessons suggestions in the latter half of this paper provide further thoughts on "gophering" evaluation, but a succinct way of putting those ideas is that I find little logic in applying traditional modes of evaluation to radically different learning activities. I

suggest, furthermore, that teachers who find conventional evaluative methods easily applied to their students' Gopher-search activities have undoubtedly made the activities fit the mode of evaluation, rather than the (more sensible, to me) other way around.

Effects on Texts

Two of the most obvious effects of Gopher exploration on student writing—increased originality of ideas and increased rhetorical awareness—have already been mentioned, but a third and equally profound effect is encountered primarily in those situations where students have the opportunity to contribute their own writing skills to a Gopher file or server. In these situations, students have the opportunity to learn about the fluidity of text by observing and participating in the continuous revision of what many would tend to consider fully formed, artifactual, published text. Few who virtually visit Gopher sites, in this respect, fail to notice the ubiquity of notices stating that certain sites or files are "under construction."

My point is that Gopher-file information, almost by its very nature, is simply not true for all time, and is therefore updated, added to, and replaced as an ongoing project. Students who read only textbooks and the more conventionalized ink-and-paper offerings of their school libraries in preparation for their academic writing, however, may easily form the idea that a "ceiling effect" applies to academic writing, that one works on writing only until that writing is publishable—publishable for the particular situation, of course—and then no more. I believe that the evolution of Gopher-based text is essentially a speeded-up version of the replacement of the world's literature, and that Gopher information merely instantiates this process within a time-frame which students can more easily notice. The bottom line is that students easily may find the Gopher paradigm of textual evolution more verisimilitudinous than they find traditional publishing paradigms.

Community

To reiterate, students who find Gopher-based texts more relevant to their own interests and concerns are likely to develop increased learning as a result of Gopher-based writing and reading, a development also likely for those students who find the less-hegemonic texts of Gopher spaces more intellectually empowering. In addition, because explorations of Gopher spaces are likely to involve ground-breaking learning, learning which the teacher cannot predict and may have little direct influence upon, students are more easily encouraged to engage in forms of collaborative learning and more likely to engage in such learning activities of their own volition. In turn, the collaboration between students in less teacher-centered learning—students who learn new methods of navigating Gopher spaces may learn best, after all, from other, successful students—encourages students to think of themselves, their classmates, and the authors of the Gopher texts they read as co-teachers and co-learners. In such an occurrence, teachers often find themselves with the interesting problem of redefining their role in the class's learning, at which times they often find themselves cast as fellow learners.

Purposeful Knowledge Formation

A final, easily predicted effect of Gopher explorations on writing classes is that students can more readily be encouraged to think of pre-existing texts as information resources, as the building blocks of knowledge, rather than as discourses which they are somehow supposed to emulate without seeming like they are copying. Many highly logical texts in educational literature expound the benefits of disciplinary models for student writing, and I do not dispute their claims. I wish to point out, however, that teachers of writing must not overlook the danger of students somehow perceiving that they are expected to mirror rather than emulate the ideas, the phrasing, and the thinking of their academic models.

Gopher texts seldom, as noted, incorporate the writing form or rhetorical pattern expected of students' academic writing. Furthermore, Gopher texts tend to be more "conversational," much less carefully considered and artfully crafted, and they present such a diversity of views on any topic that students can more readily formulate a personalized view, rather than being overpowered by the rhetorical force of one or two authoritarian sources. Of course, the rhetorical force and ideological aspect of even the least rhetorical-appearing texts must never be overlooked in the writing class, but teachers' responsibilities in this regard are little changed, perhaps, when their students read Gopher-based texts as compared to their reading any other texts. When making an omelette, we must remember, eggs will be broken: we must accept, that is, that to encourage students to think of writing as purposeful knowledge-making we must allow them opportunities to construct ideas with which we may not agree.

Suggestions for Gopher-Based Pedagogy

Beyond the teacher's (or, more rarely, a program administrator's) belief that students can benefit from exploring Gopher information-sources in writing classes, why would students themselves be motivated to engage their physical and intellectual energies in such activities? The point of this rhetorical question is simple. In the sense that, ideally, educators would like students to bring motivations to learn to an academic enterprise, particularly one which is less familiar to them and therefore, in some senses, more difficult, teachers should attempt to identify a "hook," some reason for students to <u>want</u> to get involved with Gopher explorations.

Some motivating reasons for engaging with learning activities, of course, can be relatively attributed to the broad scope of students and of school learning situations, while many of the more influential learning motivations are more

specific to individuals and/or situations. I recommend that teachers encourage their students to find a function of the Gopher system helpful to them in solving a problem of personal interest, whether that problem involves curiosity to learn unusual information or involves an assigned task which can be more interestingly accomplished via Gopher-based information than via more traditional academic means. The suggestions in the two subsections which follow aim at encouraging every student to find personally vexed reasons for learning something <u>about</u> and something <u>through</u> Gopher exploration, at the same time providing a general framework adaptable (I hope) to a more general set of student needs and interests.

<u>General Ideas for Gopher-Based Writing Pedagogy</u>

1. Spin the globe. Ask students to pick a place or topic to learn something about, encouraging them to use Gopher just to see what they can learn. This assignment is relatively simple and primarily reporting, but has the potential benefit of encouraging unique, personally involving explorations rather than dependence upon a teacher's direction. High-school students may be highly motivated to search college gophers for the features of colleges they may wish to attend, and college students may be motivated to learn more about friends' campuses or about their own campuses in comparison with others.

2. Ask students to pick a Gopher site and describe it as a place. What are its characteristics? What is its value? How does it compare to other Gopher sites? How does it compare to other data-source places? How does one get there? What interesting sights (sites) would one see on the trip there? What connections to other potentially interesting or useful (intellectual) places can be inferred? Such an activity promotes student awareness of intertextuality, along with interpersonal connectivity and interactivity.

3. Gopher as research tool: Veronica (a Gopher search mechanism) searches could be helpful for "I-search" papers and other types of researched paper

projects. A word (or two) of warning, however, is necessary: The effectiveness of a Veronica search depends upon the choice of search words, and the few available Veronica search "engines" are usually overloaded during peak hours. Despite these problems, access is greatly enhanced on some campuses through Internet connections via library and lab monitors, with the contiguity of data-sources in the library especially exemplifying the rich potential for interactivity between library and Internet resources. Access to Gopher search engines is also multiplying, through the addition of subject-search systems at an increasing number of Gopher sites and the increase in available "links" between individual Gopher sites.

4. Directories of gopher sites, such as The Internet Directory, The Whole Internet, or The Internet Yellow Pages, provide useful structure to the search procedure. Students may not always have someplace particular they want to search for information, and in fact should be encouraged to think of computer-based data ssearches as heuristic, but most balk at simply diving in. Another very valuable practice is for instructors to design their own directories of Gopher information sources, directories specifically focusing on general-interest areas likely to appeal to their classes or on topic-areas currently under class consideration. An even more valuable exercise, in terms of student involvement and student learning, is for students to construct such guides as combined reading/writing projects.

5. Teachers and classes may use a Gopher site or file for syllabi, handouts, or any other class documents, all of them linked to each other or to other texts. For a writing class, students can publish in an international forum by writing to a Gopher space, and once links are established or the address becomes published, anyone can potentially get to the text and read it. Then, if they desire, reading/writing partners in different physical locations can link their

Gopher documents or files to each other's, and can collaborate, certainly, on the construction of both direct and indirect (discursive) links between their texts.

Specific Gopher-Based Lessons for a Writing Class

Assignment One:

1. After teachers have provided some general background knowledge and a general guide to Gopher navigation, this initial Gopher lesson should provide broad suggestions of the Gopher system's practical utility and its value as a mental exercise.

2. Give relatively detailed, structured directions, down to "type 4 at this prompt."

3. Leave something flexible, however, so that students must do some actual reading of menus and so they can adjust to differing access interfaces.

4. Ask students to go to a particular site and a particular document.

5. The site should have a readily identifiable navigational point; a locational name, such as "Illinois," can be used as a landmark mnemonic.

6. The destination document should have a relative or potential utility for as many students as possible, but need not be directly utilizable (like a source directly utilizable in a common essay assignment would be).

7. There should be little pressure, but every student should be required to interact with the "factual" material and to self-analyze the procedural knowledge gained. Group discussion also helps to establish the likelihood of diversity of interpretations and experiences, even in tightly structured tasks.

Assignment Two:

1. Build on the knowledge gained in the previous exercise; task two might ask students to visit a college Gopher, as (for example) they did in task one.

2. Don't list navigation directions on the assignment sheet; encourage students to explore different sites and different modes of navigation (they should have some general strategies in the original handout, but these directions should be as brief and as simple as possible).

3. Suggest that they use this second Gopher search as a heuristic. That is, encourage students to make explicit connections between commonly found information (in the students' experiences) and imminent research projects.

4. Leave the task open-ended: if students find directly applicable information or topics, wonderful; if not, ask them to analyze what they do learn.

5. Be prepared for increased frustration with this task, but require an honest effort to fulfill the assignment and emphasize learning potential through process logs and class discussions of experiences (some students may decide to research, for example, the campuses where they have e-mail penpals).

Assignment Three:

1. Build on the knowledge gained from the previous exercises, both factual and procedural. Ask students to search Gopher sites and files to look for information specifically applicable to a given assignment.

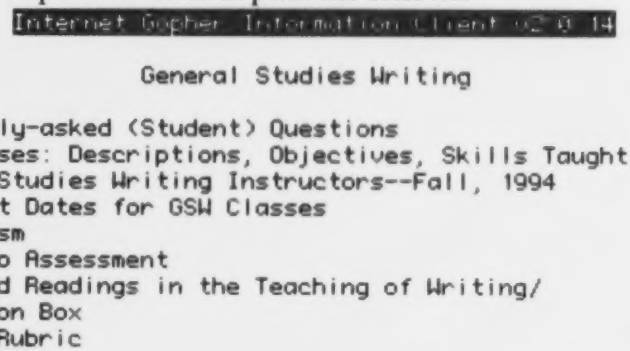
2. The topic-focus is set for the search, but where to start, how to navigate, and what to read are completely open-ended. Students should be encouraged to construct either unique topics and approaches or different data and approaches for the (often well-worn) topics they select.

3. Suggest wide areas of search and comprehensive search strategies, so that even students' focused searches take them into some new territories.

4. Prepare for even greater frustration, but prepare, too, for some instances of increased creativity; process logs and subsequent discussion serve as effective modeling, and follow-up demonstrations of particular successes also boost learning.

Administrative Applications of a Gopher-Server

As a complement to specifically pedagogical emphases of the Gopher information system, an increasing number of academic departments and programs are beginning to utilize Gopher servers as an aid to their operations, including many English departments, many writing programs, and many writing centers. Because readers can easily forward a copy of Gopher documents to personal e-mail files, some of the need for paper copies of documents is obviated, and because Gopher files are generally available to anyone with Internet access, interested parties around the world find the information in these files readily retrieved. Departmental and program administrators appreciate the opportunity to add to the communicative power of their offices, as they can offer more information than departmental budgets would normally allow, at a negligible cost and in a format which makes the information available to all interested readers 24 hours a day, 7 days a week. An example of such a Gopher file follows:


Internet Gopher Information Client
General Studies Writing
1. Frequently-asked (Student) Questions
--> 2. GSW Courses: Descriptions, Objectives, Skills Taught
3. General Studies Writing Instructors--Fall, 1994
4. Important Dates for GSW Classes
5. Plagiarism
6. Portfolio Assessment
7. Suggested Readings in the Teaching of Writing/
8. Suggestion Box
9. The GSW Rubric
Press ? for Help, q to Quit Info Center/Gopher, u to go up a menu Page: 1/1

The picture preceding this paragraph represents the Gopher file established by the General Studies Writing (first-year writing) program at Bowling Green State University for the benefit of its students and instructors. Like many university Gopher files, this one is primarily intended to give present and future students useful information about the first-year writing courses BGSU offers, but this particular file also attempts to help students make contacts with their instructors, attempts to help them understand university and program policies and requirements, and attempts to help instructors through a large and detailed offering of suggested readings in the teaching of writing. Other school-oriented Gopher servers and files offer more research-oriented information, generally providing a forum for the sharing of "factual" information such as the results of a research project on the genetic makeup of soybean strains.

Experience-Based Inferences about Gopher's Educational Potential

After moderate experience in introducing both students and instructors to potential applications of Gopher exploration in writing classes, my inferences coalesce around the notions that fear of the unknown inhibits many students and instructors from undertaking what might otherwise be productive experiences with Gopher, that evaluation linked to assignments involving Internet resources must be carefully and specifically designed to accord with the learning goals of those projects, and that, rather typically for computer-based learning at present, access to Internet resources continues to exert great influence on the success of Internet-based projects and on the ways those projects can be administered. Brief explanation of each of these inferences and their underlying reasoning follows.

Fear of the unknown, or some variant of that phobia, appears to be the largest single constraint or inhibition operating upon both students and instructors who might otherwise stand to gain a great deal by acquiring skills and knowledge via

Gopher explorations. In this sense, certainly, fear of operating within Gopher realms is symbolic of the fears some have of operating within any computer-based realm. Fear is definitely part of these persons' hesitancy to attempt computer-based language operations—fear that they won't succeed, fear that they won't know whether they're succeeding, and just simple fears that they'll "waste their time" for no tangible results—but reluctance to undertake any learning project for which the ground rules are not already familiar is another aspect of their fear. Regardless of the ways such fears are translated into action or of their causes, instructors must expect, at least at the present time, as many as 1/3 of their students to basically do nothing with a Gopher assignment unless the goals, criteria for success, and paths to problem-solution are quite clear in advance. These students are either unwilling (as a result, probably, of educational training) or unable (cognitively or because of lack of confidence) to make the kinds of intuitive leaps which pay off so well in Internet explorations.

Partly because of this significant percentage of hangers-back in each class and partly because logic dictates, writing teachers should specially design evaluative procedures and criteria for Internet/Gopher explorations and specially tailor them to a given class. If the instructor knows, that is, that a certain book is on a reserve shelf in the school library and that every student has the opportunity to walk to the library and read that book, and if the instructor's goal is for every student to read that book and "learn" the same information, that circumstance at least allows for efficacious application of a different evaluation than do the Gopher lessons suggested in this text. Whether or not those more traditional methods of evaluation are truly good for any educational situation is another matter.

As a result of personal experiences, I conclude that Gopher-based assignments are best evaluated as a means or part of a process rather than as ends in themselves, and that the evaluation of such assignments should be flexible enough to allow for

indeterminable student outcomes yet clear enough prior to assessment for students to have some idea of how their work is proceeding and what constitutes a good or fruitful effort. Ideally, students will come, over time, to consider Gopher exploration a process valuable in its own right, but at first they definitely will expect the relative degree of evaluative structure they're accustomed to. They can have structure, however, without having the same paradigm of evaluation used in education since 1900.

Summatively, access to computer resources of any kind and to Internet resources in particular continues to be a big constraint to Gopher exploration in and for writing classes. Even many computer-lab classrooms still have only a single modem connection with Internet, and most larger universities with multiple hard-wired or ethernet-connected labs have constant waiting lines, at all but the most unpopular times, for Internet-linked machines. Some students, naturally, take advantage of this prevalent situation to fashion an excuse for not "doing their homework," but in all too many cases students' excuses for not accomplishing a Gopher-based assignment or for not spending adequate time on that assignment are quite justified. In such circumstances, teachers have little option but to present the exploration of Gopher to students as one path or means to desirable learning, but not the only path.

Teachers may rest assured, after all, that those students who truly see a need in their lives for learning to navigate within Gopher space and to appropriately manipulate Gopher-based information will be highly motivated to do so. Those students who see no such need or somehow lack the cognitive makeup necessary to acquiring such skills will, in most cases, simply not acquire them. There are other important educational goals, and other ways for writing instructors to help their students. A large group somewhere in the middle, however, remains to be convinced—they know nothing about Gopher, they're not sure whether anything

like Gopher is of potential value to them, and they're often somewhat afraid of unpredictable educational outcomes. Perhaps this is the group which requires the writing teacher's best efforts, where Gopher and Internet are concerned, at this point in the evolution of our society's computerization. In short, Gopher and other Internet information resources can greatly augment students' thinking and their thinking about/through writing, but they aren't panaceas, and they shouldn't be treated as such.

Note: For additional information or for an opportunity to interact with the ideas expressed in this paper, readers are encouraged to make a virtual visit to the General Studies Writing Gopher file, listed under "Information Organized by Colleges and Departments" in the Bowling Green State University (Bowling Green, Ohio) Gopher server. Similarly, readers are encouraged to visit the World Wide Web home page designed specifically to deal with the 1994 NCTE presentation growing out of this paper, a collaborative endeavor largely authored by my colleague at Bowling Green State University and co-presenter at NCTE, Steve Krause. The U.R.L. (address) for the "Gopher Is No Longer Just a Rodent" home page is <http://www.bgsu.edu/~skrause/gopher.html> . As those familiar with World Wide Web can guess, this WWW document is in hypertext markup language, which means that it incorporates links to WWW and Gopher documents/files which deal with related topics.